CLAIMS

1. A method of controlling the speed of an electric motor powered by a triac to maintain a preset speed, by varying the electrical angle at which the triac is triggered, characterized in that it comprises the steps of:

- producing a signal related to the first derivative of the motor speed;

- producing a signal related to the difference in value between the motor current speed and the preset speed (Error P); and

- producing a control signal based on said first derivative related signal and said Error P related signal to adjust the triac electrical triggering angle to operate the motor at the preset speed.

2. The method as claimed in claim 1, characterized in that the step of producing said first derivative related signal comprises:

- measuring the motor speed at different times and calculating the first derivative of the measured motor speed;

- determining a yield value (Yield D) of the value of the first derivative from a numerical range of values; and

- producing a band (Band D) value as the product of the value of said calculated first derivative and said Yield D value.

3. The method as claimed in claim 1, characterized in that the step of producing said signal related to the Error P value comprises:

- determining a yield value (Yield P) of the value of the Error P signal from a numerical range of values; and

- producing a band (Band P) value as the product of the value of said Error P value and said Yield P

value.

4. The method as claimed in claim 2, characterized in that the step of producing said signal related to said Error P value comprises:

- determining a yield value (Yield P) of the Error P value from a numerical range of values; and
- producing a band (Band P) value as the product of the value of said Error P signal and said Yield P value.

5. The method as claimed in claim 4, characterized in that the step of producing said control signal comprises:

- producing a signal of the sum of said Band D and said Band P values (Total Error); and
- converting said Total Error signal into a signal which corresponds to the error of the triac electrical triggering angle needed to achieve the motor preset speed.

6. The method as claimed in claim 2, characterized in that the step of determining said Yield D value includes having zero, median and high values.

7. The method as claimed in claim 4, characterized in that, in the step of determining said Yield D value which includes having zero, median and high values, is carried out the step of determining said Yield P value only if said Yield D value is of median value.

8. The method as claimed in claim 7, characterized in that the step of determining said Yield P value includes having values of low and high corresponding to low and high values of Error P. .

9. The method as claimed in claim 8, characterized in that if the Yield P value in neither of low or high and the first derivative of the motor speed is of a low value, a Yield P of a low value is produced if either of the conditions of Error P being of positive

sign and the first derivative of the motor speed is of negative value, or the Error P being of positive sign and the first derivative is of positive value.

10. The method as claimed in claim 8, characterized in that if the Yield P value is neither low or high and the first derivative of the motor speed is of a low value, no Yield P value is produced if both of the conditions exist that the Error P value is of positive sign and the first derivative of the motor speed is of negative value and Error P is of positive sign and the first derivative of the motor speed is of positive value.

11. The method as claimed in claim 5, characterized in that it further comprises the step of limiting the Total Error signal to limit excessive changes of the triac electrical triggering angle.

12. The method as claimed in claim 5, characterized in that it further comprises the step of computing the final triac electrical triggering angle by adding the triac electrical triggering angle of said Total Error to the electric triggering angle that produces the current motor speed.

13. The method as claimed in claim 12, characterized in that it further comprises the step of limiting the final triac electrical triggering angle to avoid loss of control.